

**19 JULY 1994**

**Acquisition**

**THE SEEK EAGLE PROGRAM**



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This instruction implements AFPD 63-1, *Acquisition System*, and introduces *The SEEK EAGLE (SE) Program*. *The SE Program* is the standard for the aircraft-stores certification process of the US Air Force. This program assures aircraft-store compatibility (store loading, safe carriage, separation, and safe escape), and weapon delivery accuracy verification. It includes engineering analyses, computer simulations, wind tunnel tests, and flight tests to obtain the data needed to verify accuracy of and or update Operational Flight programs and technical orders (TO). It applies to all operational units (Active, Air National Guard (ANG), and US Air Force Reserve).

**SUMMARY OF REVISIONS**

This revision incorporates the requirements, information, and procedures formerly in AFR 80-54; reorganizes text; changes several procedures; establishes a process to formally prioritize SE requirements, and adds a glossary of abbreviations, acronyms, and terms ( **Attachment 1**).

## Chapter 1

### PROGRAM DESCRIPTION

**1.1. SE Certification.** SE certification will be accomplished on all weapons (conventional and nuclear), suspension equipment, tanks, and pods carried externally or internally. The process includes safe upload and download procedures; flight limits for safe carriage, employment, jettison, safe escape, and ballistic accuracy verification. Recertification is required for any change which alters the aerodynamic characteristics of the aircraft or store, or the ejection characteristics of the suspension equipment as identified in paragraphs A.2.2 and A.2.3. SE certification does *not* include:

- The nuclear safety certification described in AFI 91-103, *Air Force Nuclear Safety Certification Program* (formerly AFR 122-3), or the certification required before the nonnuclear munitions safety board;
- Avionics, electrical, and mechanical integration of the operational interfaces between an aircraft and a store; or
- Development or modification of aircraft or stores to achieve the aircraft-store configurations certified under SE.

See **Attachment 2**, *Configurations Requiring Certification*, for details.

**1.2. Types of Certifications.** There are three types of certifications:

- Quick Reaction Certifications.
- Routine Certifications.
- Flight Clearances.

**1.3. The Process.** The process begins with a user request, referred to as a SEEK EAGLE Request (SER) and ends with the publication of TOs and verification of ballistic inputs to Operational Flight Programs (OFP). The Air Force SEEK EAGLE Office (AFSEO) manages all certification activities and the aircraft System Program Director is the final certification authority for aircraft and store configurations. See **Chapter 3**, *Procedures*, for details of the process.

**1.4. SE and Systems Acquisition.** Program managers must initiate SE planning not later than the Demonstration and Validation (Dem/Val) phase of both aircraft and weapon programs and develop a SE Certification Plan which includes:

- Aircraft-store compatibility issues addressed during Dem/Val Trade-off studies.
- Contractor SE activities planned during engineering and manufacturing development (EMD).
- The plan to develop and sustain an organic Air Force store certification capability for the weapon system (exit criteria for the Milestone III Air Force review).

The Milestone II Air Force review requires completion of a SE Certification Plan with AFSEO coordination. The applicable operational command must submit a SER by Milestone II to identify the baseline aircraft-store configurations required for certification before IOC.

**1.5. SE Funding:**

- Inventory and modified inventory aircraft is per **Attachment 3**.
- Baseline configuration requirement on developmental aircraft and store programs is the responsibility of the developing program office.,
- Developmental stores that are baseline configuration requirements on developmental aircraft are according to program office agreements.

## Chapter 2

### RESPONSIBILITIES

**2.1. SE Responsibilities.** These fall into three categories:

- Establishing program policy (SAF/AQP).
- Developing an integrated Air Force SE priority list ( all user MAJCOMs).
- Executing this policy and completing certifications (AFSEO and aircraft/store program offices).

**2.2. SAF/AQP:**

- Semi-annually validates the integrated Air Force SE priority list for AFSEO implementation.
- Integrates aircraft, store, and SE Program Management Directives (PMD) to provide consistent direction to meet user requirements and need dates.
- Serves with SAF/XOR as the final authority for SE prioritization issues as forwarded by MAJCOM/DOs (19 AF/CC for AETC).
- Provides HQ USAF/XOR and HQ USAF/LGS/LGM with the SE composite store procurement requirements for each Planning, Programming and Budgeting System (PPBS) cycle.
- Reviews aircraft and store Mission Need Statements (MNS), Operational Requirements Documents (ORD), to include draft documents, and Test and Evaluation Master Plans (TEMP) for SE requirements.

**2.3. SAF/IA:**

- Submits SERs for negotiated and validated Foreign Military Sale (FMS) and international programs ( **Attachment 8**), providing funding for any required stores.
- Coordinates in integrating FMS SERs into the Air Force SE priority list.
- Includes the SER and Project Plan as part of the Planning and Review (P&R) and Pricing and Availability (P&A) process.
- Provides Certification Data Package (CDP) (see **Attachment 7**) and storage handling instructions to support test and analysis for certification of foreign stores, not in US inventory, on US Air Force aircraft.
- Identifies munition requirements annually in the Air Munitions Forecast (Peacetime Conventional Ammunition Requirements) (RCS: HAF-LGS(A)9452) according to AFI 21-208, *Munitions Forecast, Allocation, and Buy Budget Processes*.

**2.4. HQ USAF:**

- HQ USAF/XOR:
  - Identifies SE conventional certification store requirements in the Theater Munitions Program (TMP) and Tactical Air Missile Program (TAMP).
  - Informs SAF/IA of the impact to foreign users before decertifying an inventory store.
  - Resolves SE prioritization issues with SAF/AQP
- HQ USAF/LGS/LGM:

- Provides the stocks of conventional munitions that SAF/AQP has identified as needed for SE certification.

**2.5. Headquarters Air Force Material Command (HQ AFMC).** HQ AFMC will:

- Maintain an organic capability for the SE process, providing wind tunnel, ground test, and flight test support for store certifications and ballistic accuracy verification.
- Maintain a headquarters SE focal point for programmatic and policy issues.

**2.6. AFSEO:** AFSEO will:

- Manage all SE activities for inventory aircraft and stores using the SE Management Support System (SEMSS) in partnership with the aircraft and store program offices.
- Provide certification and flight clearance recommendations for aircraft-store configurations to the Aircraft System Program Director.
- Obtain using command acceptance of results for configurations requiring ballistics accuracy verification.
- Plan, program, and budget for SE activities ( **Attachment 3**).
- Compile store procurement and expenditure forecasts required for SE and submit them through MAJCOMs (19 AF for AETC) according to AFI 21-202, *Combat Ammunition Operations Procedures* (formerly AFR 136-12). Control the use of SE-allocated stores.
- Coordinate on all SE activities for developmental aircraft and stores.
- Report on all aircraft-nuclear store compatibility and aircraft-conventional store certification efforts to IWSMOs and SAF/AQP as requested.
- Report funding requirements to HQ ACC and SAF/AQP.
- Coordinate SE process sustainability requirements through US Air Force programs such as Investment and Modernization (I&M) and Test Investment Plans and Programs (TIPP) and through OSD programs such as Central Test & Evaluation Investment Program (CTEIP) and through aircraft and store IWSMOs.
- Sustain and ensure future viability of the Air Force SE process.
- Convene and chair SE Working Group (SEWG) meetings.

**2.7. Aircraft Program Offices.** These offices will:

- Be the final certification authority for aircraft-store configurations for operational use ( **Attachment 5** or **Attachment 6**).
- Plan early-on for SE activities during development programs.
- Provide requested time, resources and cost estimates for AFSEO Project Plans.
- Plan, program, and budget, with the AFSEO and store program offices, for the certification requirements directed in the aircraft PMDs, to include initial operational configurations and Required Assets Available (RAA) configurations.
- Task prime contractors (with AFSEO requirements) for dedicated SE activities requiring their support.

- Coordinate with the Nuclear Weapons Integration Division (SA-ALC/NWI) and the AFSEO on nuclear store compatibility plans and requirements.
- Notify the AFSEO and using command of potential configuration changes which may require recertification.

**2.8. Store Program Offices.** They will:

- Provide the AFSEO with a current CDP for the store ( **Attachment 7**).
- Support the AFSEO in the development of the SE Plan (including initial operational configurations and RAA configurations).
- Plan for SE efforts in the store acquisition program.
- Notify the using command, aircraft program offices, and AFSEO of potential store characteristic changes which require recertification of previously certified configurations.

**2.9. Nuclear Weapons Integration Division (SA-ALC/NWI).** SA-ALC/NWI will:

- Manage applicable nuclear weapons loading and delivery technical orders.
- Provide a Chairperson or member for the aircraft nuclear weapon systems project officer groups, and identify the requirements for SE certification.
- Develop and manage nuclear safe escape data for all nuclear capable aircraft and incorporate the information in weapons delivery technical orders.

**2.10. Air Combat Command (ACC).** ACC will:

- Serve as the Air Force focal point for all SE requirements and provide the coordination and leadership required to resolve prioritization issues.
- Combine MAJCOM requirements to optimize resources ( **Attachment 9**).
- Develop and execute a process to prioritize Air Force SE requirements with MAJCOMs and SAF/AQPW.
- Chair the Air Force SE priority list review with the AFSEO at the semi-annual SEWG meeting.
- Submit the integrated SE POM to SAF/AQPW.

**2.11. ACC, Air Education and Training Command (AETC), United States Air Forces Europe (USAFE), Pacific Air Forces (PACAF), Air Mobility Command (AMC) and Air Force Special Operations Command (AFSOC).** They will:

- Maintain a command focal point for all SE activities.
- Submit a SER for all SE requirements ( **Attachment 8**).
- For PACAF, USAFE, and AETC, submit SERs to the ACC focal point for consolidation and prioritization.
- Approve or reject the project plans provided by the AFSEO in response to SERs.
- Determine acceptability of ballistics accuracy from verification test results. Provide formal response to AFSEO within 45 calendar days of receipt.
- Identify projected requirements in enough time to enter the appropriate phase of the PPBS cycle.

- For developmental aircraft and stores programs, submit a SER and include SE requirements in aircraft and store ORDs at all acquisition milestones, beginning with ORD 1. Update the SER and SE aspects of the ORD at each milestone.

**2.12. The ANG and USAFR.** The ANG and USAFR will submit all SE requirements to the gaining MAJCOM SE focal point.

## Chapter 3

### PROCEDURES

**3.1. Quick-Reaction Certification (QRC).** Submit SERs for QRC, including total ballistics weapon system accuracy verification, for urgent and mission essential, worldwide aircraft-store certification requirements. QRCs take precedence over all previously submitted routine certification requirements and result in full flight envelope certification. QRCs are intended to support actual contingency or warfighting requirements.

**3.2. Routine Certification.** Submit SERs for Routine Certification for non-urgent, worldwide aircraft-store certification requirements. Limited certification may be requested as a part of this routine certification. See **Attachment 1** for definition of limited certification. AFSEO executes according to the Air Force SE priority list.

**3.3. Flight Clearance.** Submit SERs for Flight Clearances for specific, limited operational or test purposes. Since a Flight Clearance is a limited authorization, valid only for a specific time period, configuration requirements based on wartime plans should be planned for and requested as a routine certification or QRC and not as a Flight Clearance. Flight Clearances will be worked on a priority basis except to support specific flight test activities.

**3.4. Integrated Air Force Priority List.** In conjunction with the semi-annual SEWG meeting, representatives from all Air Force user commands will update the integrated Air Force SE priority list. This list, maintained in SEMSS, integrates all user requirements into a single, non aircraft specific, priority list and establishes the precedence the AFSEO will use to conduct certifications. The Combat Air Forces (CAF) excluding the HQ AFSOC and HQ AMC portion will be aligned with ACC's Research, Development and Acquisition list.

#### **3.5. SE Request:**

- The user submits a SER (per **Attachment 8**) to the MAJCOM SE focal point.
- Each MAJCOM focal point (SAF/IA for FMS cases and 19 AF for AETC) approves the SER and forwards the SER (with MAJCOM priority) to HQ ACC/DRP for integration into the Air Force SE priority list.
- HQ AFSOC and HQ AMC submit QRCs direct to AFSEO with information copy to HQ ACC/DRP.
- After prioritization, HQ ACC/DRP submits SERs ( **Attachment 9**) to the AFSEO and applicable aircraft and store program office with user need date, if applicable.
- AFSEO develops a project plan based on the Air Force SE priority list and forwards it to the requesting MAJCOM, HQ ACC/DRP, and SAF/AQPW.
- AFSOC, AMC, and SAF/IA may submit priority reclama issues to SAF/AQP for resolution.
- HQ ACC/DRP and the requesting MAJCOM must validate the project plan within 30 calendar days.
- AFSEO executes a project plan upon MAJCOM acceptance unless SAF/AQP directs otherwise.

- AFSEO and the applicable aircraft SPD end the process by:
  - Distributing SE TO manuals and verified OFPs.
  - Transmitting a certification completion notification ( **Attachment 5** or **Attachment 6**) after satisfying all the SER requirements.
  - Providing, a SA-ALC/NWI statement of compatibility for nuclear weapons in TO 11N-50-7.

**3.6. Decertification.** Submit decertification requests for configurations according to **Attachment 8** or **Attachment 9**. The aircraft program office notifies AFSEO and SAF/AQPW, in writing, not later than 2 weeks after completing all decertification actions.

**3.7. Capturing SE Data on Test and Evaluation (T&E) Flights.** In order to provide data for SE evaluation during T&E flights, all test agencies should use the configurations in the weapon delivery portion of the OFP as much as practical unless they jeopardize T&E objectives. The Master Configuration List, maintained by AFSEO, describes these configurations.

**3.8. Ballistics Accuracy Criteria.** When applicable, include ballistics accuracy verification criteria for each aircraft-store configuration in a SER to guide SE aircraft and store program activities. Develop these criteria in coordination with the aircraft program office and AFSEO. Incorporate ballistics accuracy requirements for aircraft under development in the ORD and system specification. Unless modified by the SER, the following criteria apply:

- Circular Error Probable (CEP). The Joint Munitions Effectiveness Manual (JMEM) Air To Surface Delivery Accuracy estimates expressed in milliradians for the normal plane and feet for the ground plane modified to account for the weapon's ballistic dispersion.
- Bias. A probability of range error bias (long or short) less than or equal to .10 using the standard binomial test.

**3.9. Improving the Process.** Submit proposals to AFSEO, 205 West D Avenue, Suite 318, Eglin AFB FL 32542-6865.

RICHARD E. HAWLEY, Lt General, USAF  
Principal Deputy, Assistant Secretary

## Attachment 1

### GLOSSARY OF ABBREVIATIONS, ACRONYMS, AND TERMS

#### *Abbreviations and Acronyms*

**ACC**—Air Combat Command  
**AFI**—Air Force Instruction  
**AFMC**—Air Force Material Command  
**CDP**—Certification Data Package  
**EMD**—Engineering and Manufacturing Development  
**FMS**—Foreign Military Sale  
**IOC**—Initial Operational Capability  
**MAJCOM**—Major Command  
**MNS**—Mission Need Statement  
**OFP**—Operational Flight Program  
**ORD**—Operational Requirements Documents  
**P&A**—Pricing and Availability  
**P&R**—Planning and Review  
**PPBS**—Planning, Programming, and Budgeting System  
**QRC**—Quick-Reaction Certification  
**SE**—SEEK EAGLE  
**SEMSS**—SEEK EAGLE Management Support System  
**SER**—SEEK EAGLE Request  
**TAMP**—Tactical Air Missile Program  
**TEMP**—Test and Evaluation Master Plans  
**TIPP**—Test Investment Plans and Programs  
**TO**—Technical Order

#### *Terms*

**Ballistics Accuracy Verification**—The determination of the accuracy of the weapon digital data program used with the trajectory model contained in the aircraft Operational Flight Program (OFP) and the ballistics tables/weapons delivery technical order, through testing and analysis. Verification confirms the capability of the aircraft and store combination to meet user accuracy and bias requirements. The aircraft weapons delivery OFP and updated TO ballistics are fielded after verification testing. Additionally, a ballistics accuracy verification report, compares weapon delivery results with user accuracy criteria.

**Certification Data Package (CDP)**—A CDP for a store is the primary data package used to ensure stores are physically, mechanically, electromagnetically, environmentally, structurally, and aerodynamically compatible with Air Force aircraft systems. It also ensures that the required data is present to produce the necessary TOs. The CDP is composed of the Compatibility Source Data Package, Weapon Source Data Package, and Standard Source Data Package. See **Attachment 7** for a detailed description of the CDP.

**Compatibility of Aircraft and Stores**—The ability of an aircraft to carry and release the store and related suspension equipment without unacceptable effects upon the aerodynamic, electromagnetic (excluding high-altitude electromagnetic pulse), structural, or functional characteristics of either the aircraft or store under expected flight and ground conditions. MIL-HDBK 244, *Guide to Aircraft Stores Compatibility*, contains basic guidelines for evaluating aircraft-store compatibility. MIL-STD-1763, *Aircraft-Stores Certification Procedures*, establishes DoD standardized procedures for the certification (safe carriage and separation) of stores on aircraft.

**Flight Clearance**—A formal flight authorization for a specific limited test or operational purpose such as Operational Test and Evaluation or a specific operational requirement. AFSEO issues the FC after testing and analysis has been made on an aircraft-store configuration to ensure the configuration does not pose an unacceptable risk. The flight clearance identifies, as appropriate, the aircraft loading configuration, carriage, jettison and employment limitations, information needed to make drag and stability computations, cartridge and orifice combinations or settings, reference to loading procedures and delivery information, store mass and physical properties, and any other information that affects personnel or flight safety or mission accomplishment.

**Limited Certification**—Provided at the request of the using command to have a capability in the field while a routine certification and ballistics accuracy verification tasks are being accomplished. May consist of a limited employment envelope (not flight tested), unverified Operational Flight Program, or manual ballistics only. Publication of technical data is required, for example, message flight clearance, operational supplements, and preliminary technical orders.

**Master Configuration List**—A listing by aircraft of all aircraft-store configurations requested for certification in all SERs that have not completed the SE process.

**Nuclear Certification**—The process of satisfying all applicable requirements relating to system design, aircraft and nuclear stores compatibility (SE), nuclear safety, security, support and test equipment, TOs, training, and unit readiness inspections.

**Project Plan**—The Project Plan contains the resource and time estimate for the SER and includes the following:

- An estimate of resources required, by fiscal year, to complete certification including the cost of each task of certification (such as engineering analysis and ground tests, wind tunnel tests, electromagnetic tests and analysis, flight tests, technical and source data development, and technical order update costs), aircraft hardware or software costs, and number and costs of all test stores required, by fiscal year, for safe carriage and separation and ballistics accuracy verification.
- An estimate of time to complete each task.
- An estimate of when required resources (funding, stores, etc.) are needed to support the user need date, whether these resources are available or programmed in the period required, and the impact of any funding or other resource shortfalls.

- Total fiscal year funding breakout by Program Element according to **Attachment 3**.
- Test stores required by fiscal year broken out by source, e.g., War Reserve Material assets, in production and procured with SE funding, and in production and procured through other funding like FMS or another service.
- Cost-schedule-performance tradeoffs for user consideration in refining requirement.
- Pertinent aircraft and store program data such as OFP and TO input cutoff dates and modification or integration costs and schedule.

**Quick-Reaction Certification (QRC)**—The completion of all activities required to certify the requested aircraft-store configuration. This is an accelerated certification and includes ballistics accuracy verification, if required. When an urgent operational need date for combat capability exists and the normal SE certification process will not meet the requirement, then submit a QRC. This request results in full certification, including TO updates, and is completed ahead of other certification efforts.

**Routine Certification**—The completion of all activities required to certify the aircraft-store configurations requested in the SER. These activities include planning; analysis; tests; documentation; development; publication and fielding of pertinent technical manuals applicable to loading, carriage, and employment, which include the verified ballistics data in the -34 and -25 technical orders; and the incorporation of the appropriate software changes, resulting from ballistics accuracy verification of the OFP.

**SEEK EAGLE (SE)**—The Air Force certification process for determining safe carriage, employment and jettison limits, safe escape, and ballistics accuracy, when applicable, for all stores in specified loading configurations on Air Force and FMS aircraft. The SE certification process includes compatibility analyses for fit, function, electromagnetic interface, flutter, loads, stability and control, and separation; stores loading procedures; ground and wind tunnel tests; and flight tests. The end product is source data for flight, delivery, and loading manuals, and the weapon ballistics portion of the aircraft OFP.

**SEEK EAGLE Baseline Certification**—The accomplishment of analyses, tests, and documentation, including development of applicable OFPs and manuals needed to authorize carriage and employment of initial aircraft-store configurations requested by the using command to be completed by the aircraft or store Initial Operational Capability (IOC) date. Baseline Certifications also consider those configurations that impose the highest performance demands on the aircraft.

**SEEK EAGLE Follow-on Certification**—The accomplishment of analyses, test, and documentation, including development of applicable OFPs and manuals needed to authorize carriage and employment of aircraft-store configurations requested by the using command to be completed after the aircraft or store IOC date.

**SEEK EAGLE Management Support System (SEMSS)**—A computer-based system to assist the entire SE community in planning, coordinating, executing, controlling, and reporting on the SE program.

**SEEK EAGLE Request (SER)**—A request submitted by the using command or SAF/IA SE focal point for certification of aircraft-store configurations, flight clearances, technical orders, or other SE data (see **Attachment 8** or **Attachment 9**).

**Stores**—Any device intended for internal or external carriage, mounted on aircraft suspension and release equipment, and which may or may not be intended to be separated in flight from the aircraft. Stores include missiles, rockets, bombs, nuclear weapons, mines, fuel and spray tanks, torpedoes, detachable fuel and spray tanks, dispensers, pods (refueling, thrust augmentation, gun, electronic countermeasures,

etc.), targets, chaff and flares, and suspension equipment (racks, pylons). In this instruction, chaff and flare dispensers and guns mounted internally to the structure of an aircraft are not considered stores for SE purposes, but those chaff and flare dispensers mounted externally are considered stores. A SE store for annual stores forecasting purposes is any store as described above that is used for dedicated SE testing.

**User Need Date**—The date the using command or SAF/IA requires all SE certification activities to be completed, to include the delivery of all technical orders to support implementation, together with OFP ballistics updates. The user need date will normally be six months before IOC for developmental or major modified aircraft and stores to permit lead time for training and evaluation before implementation. For inventory stores and aircraft the user need date is a balance between operational and threat requirement and the practical capability to meet that requirement.

## Attachment 2

### CRITERIA FOR AIRCRAFT-STORE CERTIFICATION

#### A2.1. New aircraft or weapon development programs, including:

- New aircraft development.
- New weapon development.
- New aircraft-store configurations on operational aircraft, even if of limited duration (a flight clearance).
- New tactics requiring new carriage, employment, or jettison limits, or new safe separation or ballistics data.

#### A2.2. Significant aircraft characteristic changes, including:

- Weapon delivery portion of the OFP or input parameters to the weapon algorithms which could impact accuracy for ballistics weapons.
- Analysis of aircraft loads, flutter, stability, and control which show unacceptable impact on the aircraft due to stores changes in center of gravity, store weight, or pitch or yaw moments of inertia.
- Addition of a computer weapon delivery capability to an aircraft with a manual delivery system or modification of an existing computer weapon delivery system.
- Modification of the aircraft or change in carriage location or type that impacts the safe carriage and separation or ballistics accuracy of previously certified aircraft-store configurations.

#### A2.3. Significant store characteristic changes, including:

- External aerodynamic shape.
- Arming wire or lanyard routing system.
- Electromagnetic radiation environment.
- Suspension lug location.
- Electrical or electronic connectors or characteristics.
- Safing or arming design.
- Nomenclature changes which affect loading aircrew inspection procedures.
- Basic structural characteristics.
- Environmental tolerance.
- Function.
- Ballistics or propulsion.
- Fragmentation pattern.
- 1/2" (12.7mm) or greater shift of store center of gravity.
- 5% or greater change of store weight.
- 10% or greater change in pitch or yaw moments of inertia.

- Multiple changes within the limits of center of gravity, store weight, or pitch or yaw moments of inertia (less than the aforementioned limits) which constitute a significant store characteristic change.

**Attachment 3**

**SEEK EAGLE FUNDING RESPONSIBILITY**

**Table A3.1. Inventory Stores.**

<b>L I N E</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Item or Task</b>	<b>Conventional</b>	<b>Nuclear</b>
<b>1</b>	Certification Data Package	Store Manager	Dept of Energy (DOE)
<b>2</b>	Store Integration-Aircraft Modification	Aircraft Manager	Aircraft Manager
<b>3</b>	Stores in production	AFSEO	DOE
<b>4</b>	Stores out of production	Drawn from inventory	
<b>5</b>	Safe Carriage and Separation-Engineering Analysis & Testing	AFSEO	AFSEO
<b>6</b>	Separation Coefficient Testing & Analysis		
<b>7</b>	Ballistics Accuracy Verification Testing & Analysis		
<b>8</b>	Ballistics Data for Aircraft TOs, OFPs, and CWDS	AFSEO	SA-ALC/NWI
<b>9</b>	Safe Escape Data for CWDS (EDA for Nuclear)		AFSEO
<b>10</b>	Preliminary Loading & Aircrew Procedures		SA-ALC/NWI
<b>11</b>	OFP Updates	Aircraft Manager	Aircraft Manager
<b>12</b>	Aircraft Tech Order Publications for Stores, Loading and Delivery	Aircraft Manager	SA-ALC/NWI
<b>13</b>	Freestream Ballistics and Pattern Determination Testing and Analysis	Store Manager	DOE
<b>14</b>	ARENA Test and Analysis	Store Manager	N/A

**Table A3.2. Developmental or Modified Inventory Stores.**

<b>L I N E</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Item or Task</b>	<b>Conventional</b>	<b>Nuclear</b>
<b>1</b>	Store Development Manager	Store Manager	Store Manager
<b>2</b>	Certification Data Package		SA-ALC/NWI
<b>3</b>	Store Integration/Aircraft Modification	Aircraft/Store Manager	Aircraft/Store Manager
<b>4</b>	Stores for Certification Testing	AFSEO	DOE
<b>5</b>	Safe Carriage & Separation-Engineering Analysis & Testing		AFSEO
<b>6</b>	Freestream Ballistics & Pattern Determination Testing & Analysis	Store Manager	Store Manager
<b>7</b>	Separation Coefficient Testing & Analysis	AFSEO	AFSEO
<b>8</b>	Ballistic Accuracy Verification Testing & Analysis		
<b>9</b>	Ballistic Data for TOs & OFPs		SA-ALC/NWI
<b>10</b>	Arena Test & Analysis	Store Manager	N/A
<b>11</b>	Safe Escape Data for CWDS, -34, -25 (EDA for nuclear)	AFSEO	AFSEO
<b>12</b>	Preliminary Loading & Aircrew Procedures TOs (Baseline)	Store Manager	SA-ALC/NWI
<b>13</b>	Preliminary Loading & Aircrew Procedures TOs (Follow-on)	AFSEO	
<b>14</b>	OFP Updates	Aircraft/Store Manager	Aircraft/Store Manager
<b>15</b>	Aircraft TO Publications for Store Loading and Delivery	Aircraft Manager	SA-ALC/NWI

## Attachment 4

### FORMAT FOR TYPICAL PROJECT PLAN

The AFSEO provides a Project Plan to the using command or SAF/IAP and to SAF/AQP to support a go-ahead decision. The Project Plan contains schedules, cost, requirements, and availability information for stores and ground and flight test support. The Project Plan includes cost-schedule-performance tradeoff options and impacts on other SE efforts, if appropriate. The AFSEO formulates and issues all Project Plans, with SE participant support, within 90 calendar days of the SER date. The Project Plan contains information in the format below. The using command's written response to the Project Plan is due within 30 calendar days of receipt of the Project Plan, and confirms or modifies the original requirements or cancels the SER.

FROM: AFSEO/CC

205 W D Ave, Suite 318  
Eglin AFB FL 32542-6865

TO: Requesting Command or SAF WASH DC//IAP

INFO: ACC LANGLEY AFB VA//DRP//

Aircraft Program Office  
Store Program Office  
SAF WASH DC//AQPW

SUBJ: Project Plan for Using Command SER X-XX Store on Aircraft

Ref: Using Command or SAF/IAP SER X-XX, (date), (subject)

1. Cost Breakout:

FYZZ +1 FYZZ+2 TOTAL

Test Aircraft Mod costs

Stores Required

Stores Cost

Engineering Analysis/

Ground Test Cost

Flight Test Hours

Flight Test Cost

Ballistic OFP Activity Cost

T.O. Update Cost

Other Cost \_\_\_\_\_

**TOTAL COST**

2. Cost and Store Summary:

FYZZ +1    FYZZ+2    TOTAL

Certification

Cost

**Attachment 4**

Stores (total #)

Verification

Cost

Stores (total #)

Total Cost

Total Cost Breakout

SE PE 27590

PE XXXXXXXX

PE XXXXXXXX

Total Store Breakout

WRM

SE PE

Other PE

Total Stores

3. Program Resources and Project Plan Impacts. State whether the required resources (funding, stores, etc.) are available or programmed in the time period specified to support the user need date, and the impact of the SER on the certifications in the directed SEEK EAGLE program.

4. Other Pertinent Details:

a. Planned start date: DD, MM, YY

b. Planned completion date: DD, MM, YY

c. Schedule constraints:

(1) First available OFP (Designation/Name) and freeze date: DD, MM, YY; OFP Fielding Date: DD, MM, YY

(2) Second available OFP (Designation/Name) and freeze date: DD, MM, YY; OFP Fielding Date: DD, MM, YY

(3) First available T.O. input cutoff date: DD, MM, YY; Fielding Date: DD, MM, YY

(4) Second available T.O. input cutoff date: DD, MM, YY; Fielding Date: DD, MM, YY

(5) SE test store availability date: DD, MM, YY

(6) Special test aircraft availability date: DD, MM, YY - DD, MM, YY

(7) Certification Data Package availability date: DD, MM, YY

(8) Additional MCL stores required to support testing: List stores such as tanks, ECM pods, missiles, and other stores required to complete the standard configuration loads identified in the SER. Identify the fiscal year in which the stores are physically required to support testing.

**Attachment 5**

**RECOMMENDED MESSAGE FORMAT FOR CERTIFICATION COMPLETION NOTIFICATION (CONVENTIONAL)  
(ISSUE WITHIN 2 WEEKS OF COMPLETION)**

FROM: Aircraft Program Office

TO: AFSEO EGLIN AFB FL//SKP//

Requesting MAJCOM or SAF WASH DC//IAP

INFO: ACC LANGLEY AFB VA//DRP//

SAF WASH DC//AQPW//

All MAJCOMs

SUBJ: Certification Completion Notification, SEEK EAGLE Request X-XX, (Store) on (Aircraft)

1. The aircraft-store combination listed in SEMSS, Priority No xxx, MCL line number xxx, was certified for operational use on (DD, MM, YY).

- a. Certification testing complete, or date of Certification Recommendation.
- b. Accuracy verification testing complete: Date (or not required).
- c. Requester (ACC, AMC, AFSOC, SAF/IAP) accepted accuracy verification results: Date.
- d. Verified weapon delivery OFP tape No (XX) fielded: Date:
- e. Aircraft flight manual, -1 fielded: Date.
- f. Weapon delivery manual, -34, with verified ballistics accuracy data incorporated in OFP block No (XX) in D above. Fielded: Date.
- g. Aircraft loading manual, -33/35, Job Guide. Fielded: Date.
- h. Other pertinent technical data. Fielded: Date.

2. SPO point of contact, office symbol, and telephone number.

## Attachment 6

### RECOMMENDED MESSAGE FORMAT FOR CERTIFICATION COMPLETION NOTIFICATION (NUCLEAR)

(ISSUE WITHIN 2 WEEKS OF COMPLETION)

FROM: Aircraft Program Office

TO: Requesting MAJCOM or SAF WASH DC//IAP

AFSEO EGLIN AFB FL//SKP//

INFO: ACC LANGLEY AFB VA//DRP//

All MAJCOMs

SAF WASH DC//AQPW/AQQS//

Air Force Safety Agency/SEN//

ASC WPAFB OH//EMSV//

SA-ALC KAFB NM//NWI

SUBJ: Certification Completion Notification, SEEK EAGLE Request X-XX, (Store) on (Aircraft)

1. The aircraft-store combination listed in SEMSS, Priority No XXX, MCL line number XXX, and Aircraft PMD XXXX, was certified with a nuclear capability for operational use on (DD, MM, YY).

- a. Weapon System Safety Rules Approval by the SECDEF: Date.
- b. SA-ALC/NWI Statement of Capability Release: Date.
- c. Nuclear Safety Certified Support/Test Equipment listed in T.O. 00-110N-16 and Fielded: Date.
- d. Verified Aircraft Loading Manuals (-16). Fielded: Date.
- e. Verified Weapon Delivery Manuals (-25, -30). Fielded: Date.
- f. Flight and Maintenance Crews Training Completion (Initial Complement required to execute nuclear mission): Date.
- g. Nuclear Safety Certified Weapon Delivery OFP tape no XX. Fielded: Date.
- h. Nuclear Surety Inspection satisfactorily passed by operational unit: Date passed.
- i. Aircraft Flight Manual (-1 series). Date.

2. SPO point of contact, office symbol, and telephone number.

## Attachment 7

### CERTIFICATION DATA PACKAGE (CDP)

**A7.1. About CDP.** The data listed in this attachment ensures that both munition and nonmunition type stores developed, procured from others, or modified are physically, mechanically, electromagnetically, environmentally, structurally, and aerodynamically compatible with United States Air Force aircraft systems. The CDP is a collection of data used to generate flight clearances and support the publication of aircraft TOs. The program office, with management responsibility for the weapon, obtains and maintains a current CDP. Store Program Offices will provide all current CDP data to the AFSEO designated agency upon request.

**A7.2. The CDP.** The CDP consists of an Engineering Data Package (EDP), a Weapon Source Data package (WSDP), and a Standard Source Data Package (SSDP).

**A7.2.1. The EDP.** The EDP is used to determine if a flight clearance or certification can be granted, is applicable to both munition and non-munition type stores. In addition, the EDP is used to obtain the specific engineering data, test data, and computer simulation programs needed to provide inputs to the WSDP. An EDP is composed of the following:

**A7.2.1.1. Physical Description.** Drawings and documentation to establish external dimensions and location of pertinent parts, such as, attaching hardware, fluid or electrical connections, fuze installations, arming wire guides, and access covers. Data to establish radar cross section (RCS) characteristics of store, suspension equipment, and store or suspension equipment and aircraft combinations.

**A7.2.1.2. Mass Properties.** Includes average weights; centers of gravity; pitch, yaw, and roll moments of inertia; and variations of these figures due to manufacturing processes, or hysteresis (slosh). Each parameter requires specific tolerances.

**A7.2.1.3. Functional Description.** Includes operational description and sequence, safing and arming actions, control surface actuation or deployment, motor performance, submunition employment, autopilot activation, guidance and control activation, and anticipated actions by the launch aircraft before and after store separation. Provides systems mathematical models when their existence relates to aircraft compatibility.

**A7.2.1.4. Interface Control Drawings (ICD).** Includes electrical, mechanical, hydraulic, pneumatic, or fuel interface, schematics, connector descriptions and locations, pin functions, electrical loads, and arming wire or lanyard routing. The EDP uses either aperture card or magnetic media (tapes, discs, etc.) format.

**A7.2.1.5. Aerodynamic Data.** Includes freestream and installed aerodynamic force and moment coefficients; and drag counts of store, suspension equipment, and combinations of aircraft, suspension equipment, and store. Includes parameters and assumptions used in their generation.

**A7.2.1.6. Electromagnetic Compatibility Interference Data.** Detailed operational description for each store electronic system or subsystem (including electro-explosive devices) and the test data and reports generated during development and qualification testing according to MIL-E-6051, MIL-STD-461/462, and MIL-STD-1512.

A7.2.1.6.1. For each transmitting system or subsystem, identifies operating frequencies, minimum sensitivity, dynamic range, half-power bandwidth, shape factor, interference rejection circuitry, and antenna type, location, orientation, frequency response, and reception pattern.

A7.2.1.6.2. For each transmitting system or subsystem, identifies operating frequencies, minimum sensitivity, dynamic range, half-power bandwidth, shape factor, interference rejection circuitry, and antenna type, location, orientation, frequency response, and reception pattern.

**A7.2.1.7. Structural Analysis.** Contains a stress analysis based on loads according to MIL-A-8591 and special reaction loads due to store functions. Includes store influence coefficients and associated mass matrix with certain stores.

**A7.2.1.8. Environmental Analyses and Qualification Test.** Includes vibration tests conducted according to MIL-STD-810, static loads tests; discusses components known or hypothesized to be sensitive to high or low temperature, aerodynamic heating, rain, ice, or hail, or other environments to the extent that safety of flight or mission accomplishment is compromised in a basic structural or functional sense.

**A7.2.2. The Weapon System Data Package (WSDP)** is the primary resource used to develop ballistics and safe escape data for non-nuclear, munition type stores. The -34 TO uses the WSDP as the source data. HQ USAF PMD 5019 defines the type of data required for the WSDP, while MIL-A-38384 defines the format. The WSDP can be a complex, expensive data package and requires a considerable amount of analysis and testing (both ground and flight). A WSDP is composed of the following:

**A7.2.2.1. Front Matter.** The front matter will include a title page, an explanation of each of the sections, definition of notes, statements concerning procedures, definitions or directions to crew members, glossary, list of illustrations, and a list of abbreviations.

**A7.2.2.2. Description.** Contains a description of the various delivery modes for all applicable nonnuclear weapons. Includes the aircraft weapon release systems and controls, weapon suspension systems, nonnuclear weapons unique to the aircraft and not already covered in the standard volume, and the nonnuclear training weapons equipment definition.

**A7.2.2.3. Normal Aircrew Procedures.** Contains the normal procedures to be followed from the time the aircrew arrives at the aircraft until they depart from the aircraft. Consists of a command-response line for the steps in the checklist supplement. Provides a brief statement of the scope and preflight, inflight and postflight procedures.

**A7.2.2.4. Emergency Aircrew Procedures.** Includes emergency release of nonnuclear stores and emergency jettison of nonnuclear stores and suspension equipment certified on a particular aircraft. Defines firefighting criterion.

**A7.2.2.5. Supplementary Data.** Includes error analysis, harmonization, safe escape and fuze arming time data, conversion values, appropriate ballistics equations, and automated systems error analysis.

**A7.2.2.6. Planning Procedures and Sample Problem.** Contains a description of the charts, tables, and assumptions to be used with respect to temperature, pressure, atmospheric density, and appropriate illustrations, and descriptions of the planning methods for each type of delivery mode. Includes safe escape charts, conversion tables, and other charts used in mission planning.

**A7.2.2.7. Planning Charts and Ballistics Tables/Digital Data Program.** Contains a description (when available) for safe escape charts, fuze arming time charts, angle-of-attack charts, sight-depression-angle charts, airspeed and altimeter position error charts (if applicable), dive recovery charts, conversion tables, and tables necessary for planning all types of releases.

**A7.2.3. The SSDP.** The SSDP for nonnuclear munition type stores is the primary resource used to develop loading procedures. The -33 TO uses the SSDP as source data. It contains a description of the munition and how it functions and provides step-by-step instructions for munition preparation and loading. MIL-S-38794, and ACC/AFMC 8-13 specify SSDP contents. An SSDP is composed of the following:

**A7.2.3.1. Munitions Description Data.** Describes and illustrates items, systems, or components of the munition. Includes (as applicable): weight, dimensions, components, suspension requirements, fuzing options, model differences, integral safety features, and functional description.

**A7.2.3.2. Support Equipment Description.** Describes and illustrates all special tools and specific items developed for handling, testing, and loading of equipment.

**A7.2.3.3. Bomb Fuzes.** Contains descriptive data on bomb fuzes, including a brief description and illustration of the fuze. Includes functional type, safety devices, arm and safe indications, type of fuze action, arming delays, and functioning delays.

**A7.2.3.4. Emergency Procedures.** Includes emergency procedures prefaced by a brief explanation of actions to be accomplished by the loading crew in case of fire or other emergency. Specifies the expected amount of time, once a munition is engulfed in flames, before detonation. Marked according MIL-M-38784, which is in Standard Data Package number 37.

**A7.2.3.5. Specific Safety Requirements.** Provides all specific safety requirements pertaining to the preparation, loading, and unloading of the munition. Specifies the safety requirements contained in Standard Data Packages 40 and 37 when appropriate.

**A7.2.3.6. Munitions Preparation.** Includes steps applicable to a single munition, multiple rack, and preloaded accessories required to inspect and prepare each munition (including components). Contains the steps required to assemble and install authorized fuzes before munitions loading and procedures to verify the safety of each fuzed munition.

**A7.2.3.7. Loading.** Includes steps required to load the store.

**A7.2.3.8. Fuzing.** Includes steps required to check prefuzed munitions and install those fuzes that are not authorized to be installed before loading the munition.

**A7.2.3.9. Post Loading.** Provides steps required to ensure the compatibility and safety of the munitions.

**A7.2.3.10. Cartridge Installation.** Applies to impulse cartridges and contains descriptive data and inspection criteria according to Standard Data Package number 36.

**A7.2.3.11. Post Loading Inspection.** Includes steps required to ensure that required safety devices are installed, bombs and nonnuclear fuzes are installed properly, and nonnuclear fuze safety devices have been removed or installed as required.

**A7.2.3.12. Delayed Flight or Alert.** Includes procedural steps required for safing of aircraft accessories, munitions, and impulse cartridges.

**A7.2.3.13. Unloading Procedures.** Includes safing, unloading, fuze removal, and the step-by-step procedures for downloading a munition.

**A7.2.4. The SSDP** for non-munition type stores (pods, fuel tanks, etc.) is the primary resource used to develop loading procedures. It is used as source data for the job guides and the -35 series and related T.O.s. It contains a description of the store and how it functions. An SSDP is typically composed of the following:

**A7.2.4.1. Store Description Data.** Describes and illustrates items, systems, or components of the store. Includes (as applicable): weight, dimensions, components suspension requirements, model differences, integral safety features, and functional description.

**A7.2.4.2. Support Equipment Description.** Describes and illustrates all special tools and specific items developed for handling, testing, loading of equipment.

**A7.2.4.3. Emergency Procedures.** Includes emergency procedures prefaced by a brief explanation of actions to be accomplished by the loading crew in case of fire or other emergency. Marked according to the requirements pertaining to the preparation, loading, and unloading of the store.

**A7.2.4.4. Specific Safety Requirements.** Provides all specific safety requirements pertaining to the preparation, loading, and unloading of the store.

**A7.2.4.5. Store Preparation.** Includes steps required to inspect and prepare each store (including components).

**A7.2.4.6. Loading.** Includes steps required to load the store.

**A7.2.4.7. Post Loading Inspection.** Includes steps required to ensure required safety devices are removed or installed as required.

**A7.2.4.8. Delayed Flight or Alert.** Includes procedural steps required for safing aircraft accessories.

**A7.2.4.9. Unloading Procedures.** Includes safing, pre-unloading, and the step-by-step procedures for downloading a store.

## Attachment 8

### MESSAGE FORMAT FOR SEEK EAGLE REQUEST (SER) AND DECERTIFICATION REQUEST (MAJCOM)

FROM: MAJCOM Focal Point

TO: HQ ACC LANGLEY AFB VA//DRP

INFO: SAF WASH DC//AQPW//

SA-ALC KAFB NM//NWIS (AWB/ENSTA) (For Nuclear Stores)

AFSEO EGLIN AFB FL//SKW

Aircraft Program Office

Store Program Office

SUBJ: SEEK EAGLE REQUEST (Store) on (Aircraft)

1. All requests, except the decertification request, must include the following information:
  - a. Type of request (full, limited, or quick-reaction certification; recertification; flight clearance; SE data for a tactics change, etc.).
  - b. Configuration information. Describe details of each requested configuration, including:
    1. Type of aircraft (for example, F-16C/D Block 40).
    2. Carriage, release and jettison airspeeds, and load factors.
    3. Weapon and function options (for example, MK-84 AIR, fuzing, arming options).
    4. Dive angles and release intervals.
    5. For ballistics stores (full scale or training stores) state which configuration the aircraft OFP will optimize, the accuracy criteria, the release parameters, and the delivery modes for accuracy verification testing. If OFP verification is not required, identify the primary wartime configuration, or primary training configuration, required for certification prior to IOC. In the case of follow-on certification, specify the primary wartime configuration.
    6. Safe escape maneuvering parameters and profiles.
    7. Describe each proposed aircraft MCL entry with all information provided except MCL line number. Send proposed MCL data to AFSEO to fit the format provided in Figure A2-1 below. Identify training configurations for training stores.
    8. Baseline and follow-on requirements (if applicable).
  - c. User need date. In addition to operational realities, this requested date takes into account resource availability, software lead times, system maturity, complexity of requested certification actions, and other programmatic considerations affecting aircraft-store certifications. Include justification for requested date and impacts if date is not met.
  - d. User point of contact.

2. The decertification request must include the following information as appropriate:
  - a. Decertification. Indicate the requested decertification by aircraft-store combination and TO line number. Include rationale for decertification.
  - b. Remarks. Include command action office symbol, action officer, and DSN telephone number.
  - c. Required completion date. State the earliest practical completion date considering TO development and update cycles and other related aspects of aircraft program schedules.

## Attachment 9

### MESSAGE FORMAT FOR SEEK EAGLE REQUEST (SER) AND DECERTIFICATION REQUEST (ACC)

FROM: HQ ACC/DRP

TO: AFSEO EGLIN AFB FL//SKW

Aircraft Program Office

Store Program Office

INFO: MAJCOM Focal Points

SAF WASH DC//AQPW//

SA-ALC KAFB NM//NWIS (AWB/ENSTA) (For Nuclear Stores)

SUBJ: SEEK EAGLE REQUEST NO. XX-XX, (Store) on (Aircraft)

1. All requests, except the decertification request, must include the following information:

a. Type of request (full, limited, or quick-reaction certification; recertification; flight clearance; SE data for a tactics change, etc.).

b. Configuration information. Describe details of each requested configuration, including:

1. Type of aircraft (for example, F-16C/D Block 40).
2. Carriage, release and jettison airspeeds, and load factors.
3. Weapon and function options (for example, MK-84 AIR, fuzing, arming options).
4. Dive angles and release intervals.
5. For ballistics stores (full scale or training stores) state which configuration the aircraft OFP will optimize, the accuracy criteria, the release parameters, and the delivery modes for accuracy verification testing. If OFP verification is not required, identify the primary wartime configuration, or primary training configuration, required for certification prior to IOC. In the case of follow-on certification, specify the primary wartime configuration.
6. Safe escape maneuvering parameters and profiles.
7. Describe each proposed aircraft MCL entry with all information provided except MCL line number. Send proposed MCL data to AFSEO to fit the format provided in Figure A2-1 below. Identify training configurations for training stores.
8. Baseline and follow-on requirements (if applicable).

c. User need date. In addition to operational realities, this requested date takes into account resource availability, software lead times, system maturity, complexity of requested certification actions, and other programmatic considerations affecting aircraft-store certifications. Include justification for requested date and impacts if date is not met.

- d. Recommended precedence and proposed PMD priority.
  - e. User point of contact.
2. The decertification request must include the following information as appropriate:
- a. Decertification. Indicate the requested decertification by aircraft-store combination and TO line number. Include rationale for decertification.
  - b. Remarks. Include command action office symbol, action officer, and DSN telephone number.
  - c. Required completion date. State the earliest practical completion date considering TO development and update cycles and other related aspects of aircraft program schedules.